DOCUMENT RESUME

ED 053 979 SE 012 302

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TITLE How to Present Audible Multi-Imagery in Environmental Ecological Education.
INSTITUTION National Science Teachers Association, Washington, D.C.
PUB DATE 71
NOTE 8p.
AVAILABLE FROM National Science Teachers Association, 1201 Sixteenth Street, N.W., Washington, D.C., 20036 ($0.50)

EDRS PRICE EDRS Price MF-$0.65 HC Not Available from EDRS.
DESCRIPTORS Audio Equipment, *Audiovisual Aids, Curriculum Enrichment, *Environmental Education, *Instructional Materials, *Instructional Technology, Multimedia Instruction, *Multisensory Learning, Projection Equipment

ABSTRACT

Described in this instructional aid pamphlet is the use of an instructional technology approach known as audible Multi-Imagery (AMI) to achieve some of the broad goals of environmental education. AMI refers to the integral development and display of two or more simultaneously projected visual images either with or in combination with 2 x 2-inch slides, motion film, and/or overhead transparencies. Coupled with the imagery component is the corresponding sound or audio track, which is usually prepared on audiotape and is played concurrently with the pictorial material. While many media combinations are possible for the development of this type of learning endeavor, discussion is limited to the creation of an environmental three-screen slide and sound presentation. Theoretical and procedural concerns of the technique are characterized under the following topics: (1) a brief description of functional capabilities, (2) a short account of the four structural elements that complement functions, and (3) an explanation of how to plan, produce, and present an AMI program, with each phase offering 10-12 suggestions. A bibliography is also supplied. (BL)

NATIONAL SCIENCE TEACHERS ASSOCIATION

how to...

PRESENT AUDIBLE MULTI-IMAGERY

in environmental ecological education

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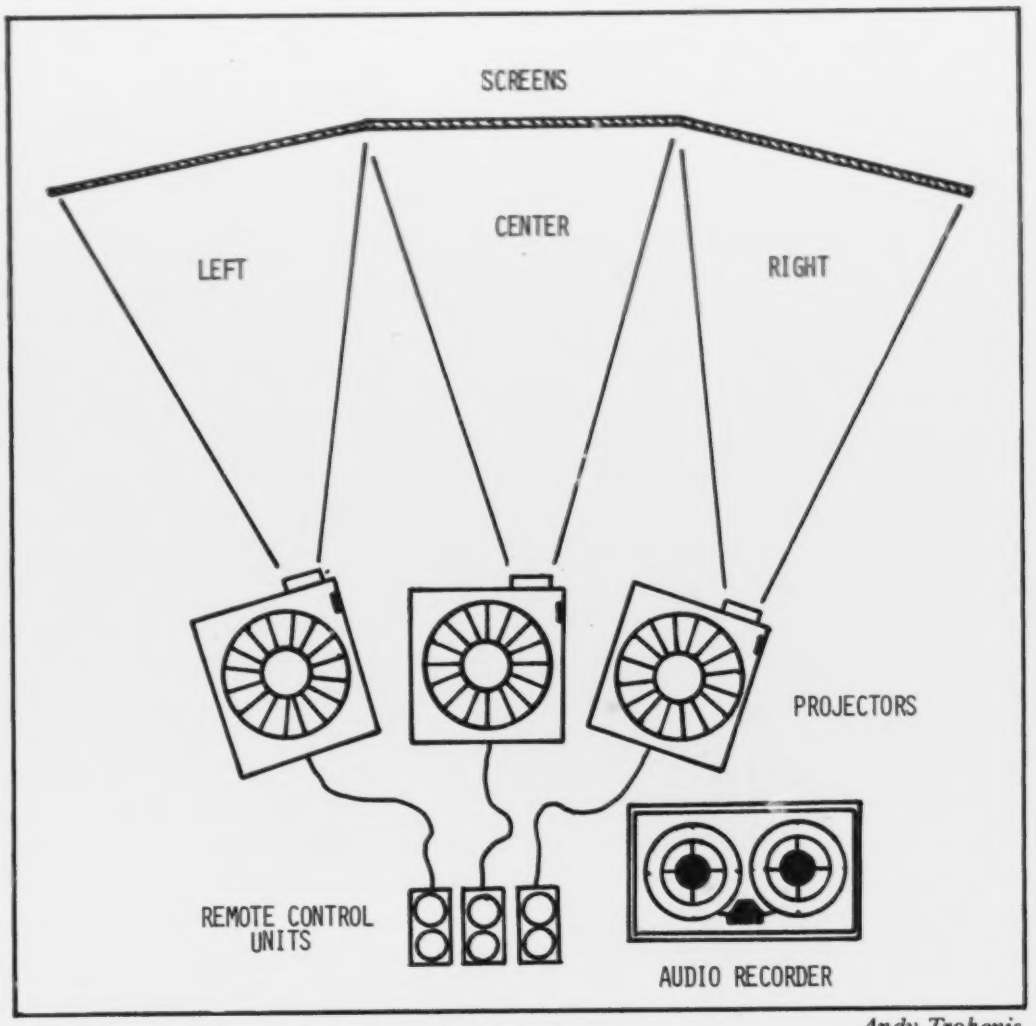
Following years of choking smog, deadly oil slicks, and other manifesting deteriorations to our habitat, national priorities are rapidly emerging to bring about less noise, cleaner air and water, livable urban areas, and preserved wilderness settings. *Presumably*, the schools will provide the best place for developing our next generation's sensitivity to these and other ecological needs.

As learners and directors of instructional processes move further into the 1970's, many more American classrooms will be dealing with a curricular component on Environmental Ecological Education (EEE). Broadly speaking, EEE must not only make learners aware of ecological problems but must develop in them an understanding of underlying issues and potential answers. In addition, a commitment to individual and collective action in the community interest must be generated.

To achieve these broad goals, educators must work with innovative, relevant, interesting, and effective learning activities to complement the dynamic needs of both the content and the student. One particular learning technique which can meet these expectations is the fresh instructional technology approach known as Audible Multi-Imagery (AMI). Very simply, AMI refers to the integral development and display of two or more simultaneously projected visual images either with or in combination with



Andy Trohanis

One design for presenting Audible Multi-Imagery

2 x 2-inch slides, motion film, and/or overhead transparencies. Coupled with the imagery component is the corresponding sound or audio track, which is usually prepared on audiotape and is played concurrently with the pictorial material.

As learning strategy for enlivening and intensifying environmental learnings, AMI provides two related levels of learner involvement. The first deals with the members of the audience, who gain knowledge and feelings on a topic from their participatory viewing and listening. The second level involves the producers who participate in AMI design, production, topical exploration, research, and social interaction. Summing up this notion of learner

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involvement levels is Perrin's observation that "multiple images reflect the feeling of our time in the need for choice, for exploration, for greater involvement and participation, and for instant communication." Ultimately, faculty and students must together decide which level of involvement they desire to pursue.

For prospective Audible Multi-Imagery users, it may be helpful to identify and explain some of the theoretical as well as procedural concerns of this activity. Consequently, this pamphlet will deal with the following AMI topics:

1. A brief description of functional capabilities
2. A short account of the four structural elements that complement function
3. An explanation of how to plan, produce, and present an AMI program.

While many media combinations are possible for the development of this type of learning endeavor, our discussion will be limited to the creation of an environmental three-screen slide and sound presentation.

AMI Functions

Numerous capabilities or functions are inherent in Audible Multi-Imagery. One function is that of illustrating right and wrong approaches to a given task or problem solution. For example, a three-screen urban environment presentation might depict on the center screen a slide of a large group of factories which were visibly spewing pollutants into the atmosphere. Both right and left screens might display pictures which show the proper approaches for controlling this pollution problem.

Another AMI function is its ability to exhibit comparisons. Illustrative of this might be the simultaneous projection of three separate central business district designs. All screens could simultaneously show three designs – such as Constitution Plaza in Hartford, Philadelphia's Penn Center, and Fountain Square in Cincinnati – while the audio reinforces these visual comparisons. Indicating relationships is yet another function of this communication medium. For example, graphs showing noise levels for different types of aircraft could be projected on the left and right screens, while the center screen exhibits a series of pictures stressing the probable detrimental human effects from excessive noise exposure. Penetrating jet noises could provide the complemental source of audio for this example.

The affective, emotional, or feeling function of AMI is the most challenging and perhaps the most difficult to develop. Here, the proper blend of visuals and music greatly enhance a desired emotional response for the viewer. In one presentation of this type, the song "Give a Damn" by Spanky and Our Gang was incorporated with a quick sequence of slide pictures that demonstrated the degradation of man within his urbanized surroundings. As one student viewer reacted after having seen this sequence: "It made me stop and think what 'pigs' we all are; I felt rotten enough to want to do something about it."

Another capability of this medium is presenting a question on one screen with the appropriate answer on the other. For instance, the left screen could pose a question like "What elements make up the web of life?" Afterward the right screen could project a diagram of the entire cycle showing the elements of plant life, herbivores, carnivores, decomposition, nutrition, and the sun, while the center screen area remains dark or blank. Each separate element of the cycle could then be amplified by both pictorial and audio material.

Finally, AMI can deliver factual information, concepts, principles, and procedures with great impact. Hence all of these functional capabilities appear to support Kappler's belief that "one picture seen by itself impresses a fact on the mind. Two or three seen together, and often with continually changing juxtaposition, conjure a complexity of ideas and relations in which the whole is more than the sum of its parts."

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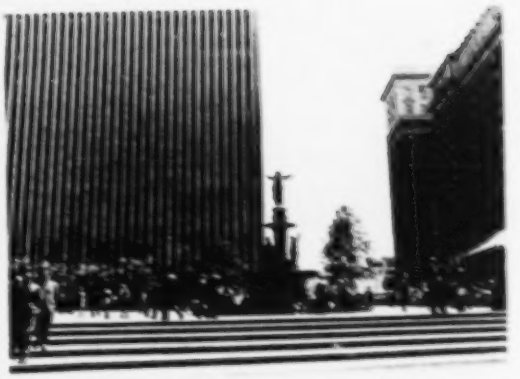


Cincinnati Chamber of Commerce

Three separate central business districts compared simultaneously have dramatic effect.

AMI Structure

Closely allied with the concerns of function are those of structure, which include the variables of audio, sequencing, screen size, and pictorial features. Function, mood, and desired impact appear to determine which picture features will be incorporated in an AMI presentation. A variety of pictorial styles – realistic, schematic, line, cartoon, and/or abstract – in either color or black and white are available for inclusion in the presentation. While there are no definite guidelines in terms of which style to use for which mood or impact, the user is urged to experiment and make decisions on the basis of his "artistic intuition." Presumably, a consideration of these general concerns about pictures will assist in communicating what is desired.

A second, related AMI element of structure is screen size. As Perrin recommends: "The openness of the large image encourages him [viewer] to explore and select for himself, giving a sense of reality and participation." Furthermore, Perrin hypothesizes that increased learning and interest correlate with utilizing large screens. The main importance of the structural variable known as sequencing is to help the viewer more easily sort, process, understand, and assimilate both audible and visible content. This must be done since there is so much information emanating from this type of mediated learning activity. Furthermore, it appears to sharpen viewer involvement by combating visual repetition and monotony. Usually the AMI user accomplishes this sequencing task by manipulating his visual displays within the confines of three interlocking screens designated as left, center, and right. Manipulation may occur in a variety of ways. For example, pictures of the 35mm slide type can appear on the screen in the following manner: vertical projection, horizontal projection, or a combination of these two projection shapes. More important, the slides can be shown in a sort of building-block manner. This means that slides can be projected on one screen at a time; two screens at a time; or on all three screens at the same time. This sequential capability is enhanced by using blank slides. These consist of opaque paper mounted in 2 x 2 slide ready-mounts. Of course they can manipulate sequence as well as hold a screen blank (no visible display or dark screen) for a desired effect.

The final structural concern of AMI is the sound track. Since the audio is an integral component of this medium, it may occasionally dominate the pictorial information, provide a mood, convey a feeling, deliver verbal information, and/or give depth and meaning to the overall production. Elements of the audio track may include such items as interviews with community people or students, sound effects, narration, and music. Musical selections, in particular, enhance the visual impact. As film expert Rotha explained about the role of music: "It performs certain duties in the exciting of human emotions which cannot be replaced by the use of either speech or sound."

In concluding this somewhat theoretical portion of our discussion of the related concepts of Audible Multi-Imagery function and structure, we urge teachers and students to bring together all possible artistry plus the time and patience to experiment with the many combinations of visuals, sound, sequence, screen size, and functions. Whether the sequence flows serenely; builds to a climax; comes to a sudden, despairing end; or achieves some other hoped-for emotional impact, a total AMI program pattern will emerge from the designer.

Let us now shift our focus to an outline explanation of the Planning, Producing, and Presenting Phases of AMI. It must be noted, however, that variations of this total scheme may occur because of budget, time, materials, content, student groupings, and audiovisual equipment.

Planning Phase

1. Determine feasibility of this learning activity. This implies that a sketchy overall appraisal of equipment

specifications, time, value, tentative goals, and "What-if" thinking should prevail here. If all looks favorable, proceed with its development.

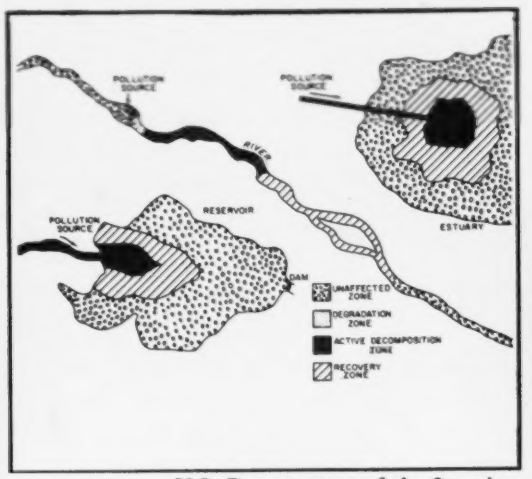
2. Decide whether this activity is to be a group or individual endeavor.

3. Evolve an idea about Environmental Ecological Education. Some specificity or topic limitation is desirable. Topics may include such concerns as:

a. National Priorities
b. Environmental Trade-offs
c. Effluents vs. Affluence
d. Land Use
e. Leisure Time
f. Future Manpower Resources
g. Dangers of Phosphoric Oxide
h. Local Issues

be pertinent in developing a presentation on land use? Questions about drainage, runoff, topography, types of soil and vegetation, climate, and other characteristics of the land may be raised for consideration. As for the social studies, how does man bring about change in land-use patterns? How do population increases affect land? What about pricing of the land? Where are highways, factories, and residential areas to be located? The arts may want to stress the quality of being human within the newly designed land pattern. What characteristics, attributes, dispositions, and human feelings are to be cultivated upon this tract of land?

6. Specify tentative target audience. may include magazine pictures, prospective materials from either governmental or private agencies that may specialize in the topic being developed. As for sound, collect written articles which may provide crucial information for later scripting. Procure audiotapes of relevant environmental television and/or radio programs. For example, federal government official speeches can be used in an environment program. Also, get interviews with people in the community or students by using a portable tape recorder. Assemble sound effects and music. Songs such as Tom Lehrer's "Pollution," the song from the Broadway musical "Hair" entitled "The Air," and many others are available. Motion film should be



U.S. Department of the Interior

"How to . . ." get a better catch, through environmental ecological education using diversity of AMI

4. Delineate some tentative objectives. Is your goal to communicate about a problem? What comparisons and juxtapositions are desired? What feelings or emotions do you want to influence? How factual do you want to be? Are awareness and understanding important? Should the viewing audience act to solve some environmental problem after seeing the AMI presentation?

5. Explore possibilities of an interdisciplinary approach. EEE should not be a single subject of inquiry. Rather it must serve as a synthesis of all school disciplines, understandings, and skills. Therefore, science should cooperate with the areas of art, communications, social studies, and mathematics. For instance, what scientific aspects would Will the production be shared with other school classes, PTA, Board of Education, community action groups, town government, or school assembly program?

7. Clarify mode of AMI presentation, timing of production, and deadline for completion.

8. Assign tasks. Who will prepare the slides? Who will prepare the audiotape? Who will gather the information? Who will write the script? Who will make arrangements for the A-V equipment? Who will make blank slides and titles? Who will narrate? Who will direct the entire enterprise?

9. Research by seeking out and gathering as much pertinent sight and sound material as possible. The sight considered as well. Finalize the activities that are outlined in numbers 2 - 8.

10. Sift through, sort, and select those ecological materials and ideas that will best suit finalized purposes. At this time, too, it may be wise to try to find a relatively permanent place to conduct many of the remaining activities.

11. Verify audiovisual equipment, material needs, and room space that will cover production and presentation phases. Still cameras, film and processing, photographic copystand, slide projectors with *remote control units* and trays, audiotape, record player with appropriate patch cords for linkage to audiotape recorder, screens or some facsimile, extension cords, presentation room, slide sorting device, paper

for scripting, ready-mounts for blank slides and opaque paper, and graphic materials for the titles or other graphics must be clearly determined.

These items represent the essentials for a manually operated presentation by using the slide projector remote control units. There are also control systems available which, when programmed, can operate the entire program automatically. (See Appendix for listing of commercially manufactured control systems.)

Production Phase

1. Tape audio track. Preference for beginning with this element is generated by personal experience. By first assembling the sound, the overall pacing and scripting are delineated. In addition, pictorial synchronization is more easily and effectively executed. Also the timing for the multiple screen activity can be carefully resolved. It is suggested that "showtime" can vary from a few minutes up to 30 minutes.

The audio might reflect the following structure: narrator opens with commentary; music and interviews are interspersed through the theme development portion; brief conclusion by narrator; and a final song, such as "This Land is Your Land," to end the tape and program.

2. Shoot 2 x 2 slides. A 35mm still camera, Instamatic, or other still cameras can be used for community or outdoor photography. In addition, a 35mm or Instamatic photo-copystand may be needed for copying pictures from magazines and books. By doing copy work, the prospective designer can not only capture some satisfying photos but can also plan for and take "panorama" pictures which depict a large view by utilizing two or more screens.

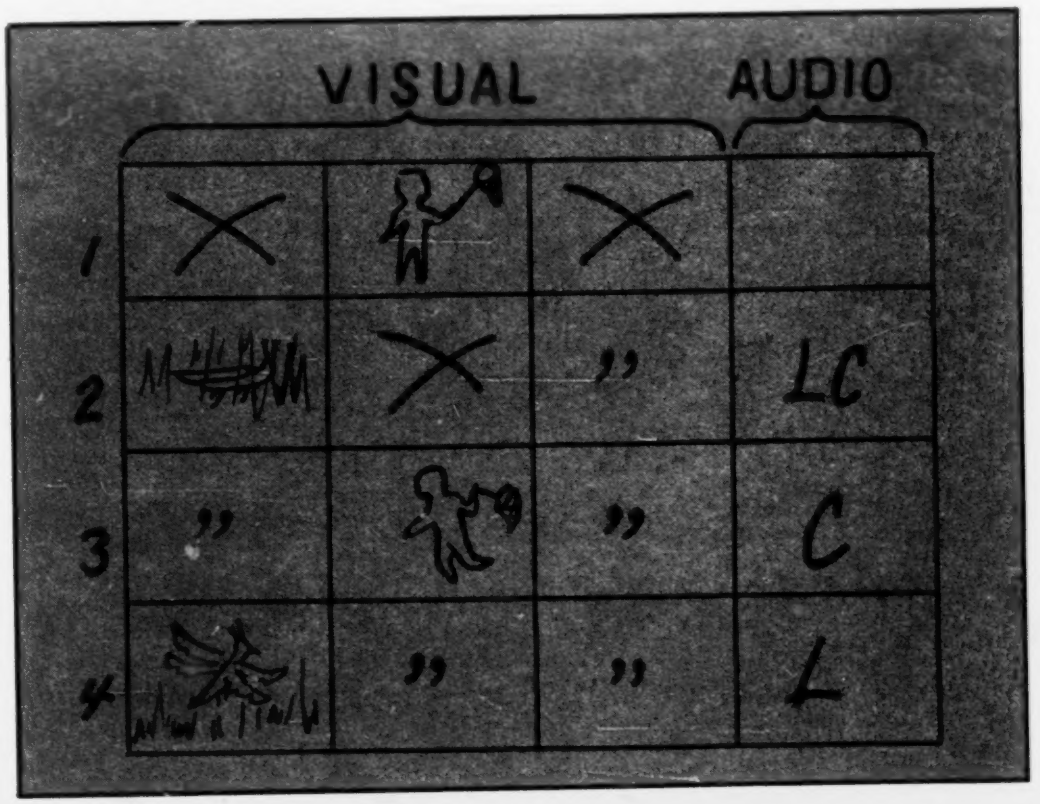
3. Design and shoot titles and other graphics. Materials for this activity may include illustration board, India ink, rub-off or adhesive letters, lettering guides, and paints. Once completed, slides of these may be prepared by using the copystand.

4. Look at the processed slides which you have received. Do any have to be reshot? Do you need other pictures which may be more effective than the ones now on hand?

5. Sort, order, and synchronize slides with the audio. By using a slide sorting board and listening to the sound track, the designer can sequence his finished slides in the manner desired. Also, remember that blank slides may be used as necessary for the visual sequencing and ordering.

Finally, since there are three separate slide projectors which can be operated independently, two at a time or all three at once, the producers can manipulate slides in any fashion desired.

6. Write out script for both visual and audio components. (Let's look at the following example together.) An X



symbol on the script stands for a blank slide and the ditto (") symbol refers to holding that slide on the screen during the next sequence. During sequence number 1, the left and right screens are blank or dark while the center one has a picture showing. Sequence number 2 has a slide change to correspond with the audio. Consequently, the left and center screens will change while the right screen remains blank. This change in number 2 is indicated by the large letters L and C to the side of the visual script column. By examining sequence number 3, center screen will change pictures whereas the left and right remain on the screen. The large C indicates this change. As for the sequence number 4, both center and right remain on the screen while the left screen will change. The large L stands for this change. This same procedure can be followed for scripting your AMI program.

7. Acquire appropriate number of projector trays. This is contingent upon the number of slides and screens being used. For example, if three screens are being used, a minimum of three trays will be employed; one for each screen.

8. Identify each projector tray. Tray identification is best done by labeling each according to its screen utilization – left, center, right.

9. Insert the ordered slides and blanks in their appropriate trays. This procedure can be accomplished easily by following the script. Simply read vertically down each visual column. First, read down the left column and place the designated slides and blanks into their prescribed tray slot. Follow this same procedure for the other visual columns outlined by the script.

Art and technology are fused here, in the Production Phase.

10. Set up A-V equipment for preview. A facsimile of such a set-up is shown in the diagram on the front. Notice how each screen allows for each image to interlock with one another.

11. Preview the presentation. Use sound track here as well.

12. Adjust AMI presentation as necessary. This refers mainly to script changes and picture rearrangement.

Presentation Phase

1. Examine carefully the area in which the AMI presentation will occur. Check space for screen placement, seating arrangements, darkening the room, power outlets, distance from screening area to projectors to determine lens type, and area for the projection equipment and tape recorder. A small lamp or flashlight may be needed by user to read script and make slide changes during the presentation.

2. Set up all necessary equipment and organize viewing space accordingly. In addition, check audio for clarity and volume as well as alignment of projected images. Make sure they interlock. (Optional: place a blank slide into the slide chamber of each projector before the trays are mounted. In this way, dark screens are possible for the beginning of the program with the projectors turned on.)

3. Introduce the AMI presentation to the audience. This will give the audience an indication of what specifics to look and listen for.

4. Present the program. With the lights down, the operator should begin the audio tape and start changing slides as designated by his script. If a problem arises during the showing, stop the tape recorder immediately and make the necessary adjustments; then resume the showing.

5. Evaluate presentation and get feedback from audience. This includes audience reactions both during and after the showing. Comments may be elicited verbally or written on a feedback sheet. What did the viewers like or dislike? What did they retain?

Naturally, make adjustments if all indicators point to this end.

6. Undertake final overall evaluation of the entire AMI endeavor. Was this a worthwhile experience? Were any new skills developed? What knowledge was gained and not gained? Could the knowledge or feelings gained be translated into future action in local environmental concerns? Was there learning that resulted from interacting with others? If the AMI activity were to be done over again, what would be done differently?

Hopefully, the descriptive blend of principles behind this activity, along with the planning, producing, and presenting phases, will prove worthwhile for the prospective AMI environmental producer. Although most of the discussion relates to three-screen slide with sound presentations, remember that other media combinations are possible. By all means feel free to experiment and innovate with this delightfully flexible activity.

Accepting the challenges of Environmental Ecological Education is the learning activity of Audible Multi-Imagery, an endeavor to involve viewers as well as participants.

Why not give it a try??????????????

B. C.

by Johnny hart

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APPENDIX

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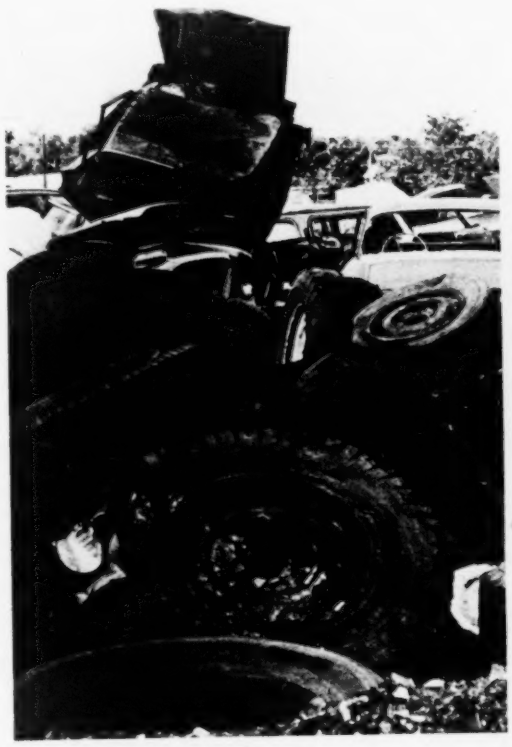
4. R.S.V.P. Corporation, 1815 North Meridian, Indianapolis, Indiana 46202
5. Spindler and Suppe, Inc., 1329 Grand Central Avenue, Glendale, California 91201
6. Teaching Dynamics, Main and Cotton Streets, Philadelphia, Pennsylvania 19127



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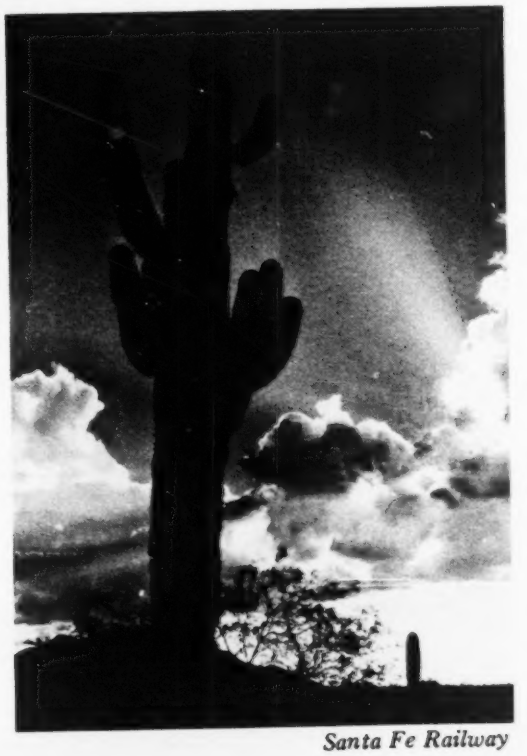

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